

MOROCCAN FOLDED-WINGED WASPS, MAINLY
COLLECTED BY PROFESSOR T. D. A.
COCKERELL'S PARTY

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During August, 1930, Professor T. D. A. Cockerell (T. D. A. C.), Mrs. W. P. Cockerell (W. P. C.) and Miss Alice Mackie (A. M.) collected in northern and central Morocco twenty-eight specimens of Diploptera representing fifteen distinct forms, which are listed below. I have added a few Moroccan records from my collection, based mostly upon specimens obtained by Professor W. M. Wheeler (W. M. W.) in May, 1925.

The localities mentioned are:

Amizmiz, about 1,000 m., lower slopes of High Atlas, south of Marrakesh.

Ank-el-Djenel (not located on the map).

Asni (High Atlas), south of Marrakesh, 1,245 m. Zone of Olives.

Azrou, about 1,500 m., middle Atlas, southeast of Meknes.

Ifrane, south of Meknes (Middle Atlas), in zone of *Quercus Ilex* and *Cedrus atlantica*.

Mahiridja, about 50 miles southwest of Taza.

Mamora (Forest of), sandy cork-oak forest, near Rabat.

Marrakesh, in the semi-desertic region of central Morocco.

Pont des Espagnols, near Casablanca, on the western coast.

Rabat, on the northwestern coast.

Tangier, on the northern coast.

Tinitine, up the valley above Asni, not far from the base of Mt. Toubkal (the highest peak of North Africa).

Masaridinae

Morocco appears to be unusually rich in masarid wasps, although most of the species are taken only in small numbers. In addition to those listed below, Meade-Waldo and Dusmet have recorded *Ceramius fonscolombei* Latreille, *Paraceramius lusitanicus* (Klug), *Quartinia dilecta* Gribodo, *Q. kohli* Dusmet, *Q. major* Kohl, and *Celonites abbreviatus* (Villers).

Masaris vespiformis Fabricius

At the Paris Museum I have seen one female from Ank-el-Djenel, June 1, 1921 (Powell Coll.), but the species has been previously recorded from Morocco. It is known from Algeria and, in the subspecies *aegyptiaca* Meade-Waldo, from Egypt and Palestine. It has never been found on the European side of the Mediterranean.

Paraceramius spiricornis (H. de Saussure)

Amizmiz, one female, May 30 (W. M. W.).

Previously recorded from Morocco and known also from Spain and Southern France. I have a female from Algeria (Orleansville).

The Amizmiz female agrees with André's detailed description of the color markings, based upon a specimen of unknown locality. Dusmet (1917, Mem. Soc. Esp. Hist. Nat., VIII, 9, p. 383) claims that *spiricornis* is not specifically distinct from *P. lusitanicus* (Klug). A comparison of the specimen from Amizmiz with a female of *P. lusitanicus* from the Sierra de Guadarrama, Spain (identified by Dusmet), discloses several important structural differences: (1) In *spiricornis* the free, anterior plate of the clypeus is about one and one-third times as wide at the apex as long; whereas in *lusitanicus* it is distinctly shorter and wider (over one and one-half times as wide at the apex as long). (2) The sculpture of head and thorax is much coarser in *spiricornis*, the difference being especially striking on the scutellum. (3) The scutellum of *spiricornis* is moderately swollen, with only a slightly raised median ridge; in *lusitanicus* it is very strongly convex, with a well-marked median, elongate hump. (4) The middle and hind femora and tibiae are more strongly flattened in *spiricornis*, and these tibiae show a decided longitudinal depression or groove on the outer surface; in *lusitanicus* this depression is scarcely indicated. I may add that the female of *P. hispanicus* (Dusmet) also is structurally quite distinct from either *spiricornis* or *lusitanicus*. All three species should be placed in *Paraceramius*, since they have the eyes deeply emarginate and the middle tibiae with a single apical spur.

Jugurtia oraniensis (Lepeletier)

Asni, Aug. 6, 7 and 12, three females and one male (T. D. A. C. and W. P. C.). Mahiridja, two females.

True *J. oraniensis* is known with certainty only from Morocco and western Algeria (Oran; Ain Sefra). It is characterized in the female by the shape of the clypeus, which is broadly and deeply emarginate at apex, ending in two rounded teeth. The specimens from Spain, referred by Dusmet to *oraniensis*, belong to a different species, which should be called *J. dispar* (Dufour). H. de Saussure, Ed. André and Dusmet all have synonymized *dispar* with *oraniensis*. Yet the female of the Spanish wasp is at once separated from the North African species by the shape of the clypeus, which has the apical margin trilobed, the median lobe being, however, much shorter than the two lateral lobes. In the male, the seventh tergite is deeply notched at the apex in *J. dispar*, whereas it is only slightly emarginate in *J. oraniensis*. I also regard *J. numida* H. de Saussure as a valid species on structural characters.

Celonites afer Lepeletier

(*Celonites fischeri* of authors, not Spinola)

Asni, Aug. 9, one female, at flowers of *Echium* (T. D. A. C.).

As R. du Buysson (1908, Rev. d'Ent., XXVII, pp. 103-104) has pointed out, there has been much confusion regarding the identity of *C. fischeri* and *C. afer*.

The true *C. fischeri* Spinola was known thus far only from Egypt; but a male from Jericho, Palestine, received from Dr. Enslin as "*C. afer*," appears to be *fischeri*, since it has the seventh tergite trilobed, with the median lobe entire.

All the published records of "*C. fischeri*" from Algeria (E. Saunders), Morocco (Meade-Waldo) and Spain (Dusmet) refer to *C. afer*, which is known from Morocco, Algeria, Tunis, Tripoli, Spain, southern France and southern Switzerland (one male from Sierre, Wallis, in my collection). In the male of *afer* the seventh tergite ends in four lobes (the median lobe being bifid).

*Eumeninae****Eumenes pomiformis* var. *mediterraneus* Kriechbaumer**

Asni, two males, Aug. 12 (W. P. C.; T. D. A. C.). Tinitine, one female, Aug. 10 (A. M.). Marrakesh, two males, May 27 (W. M. W.). Pont des Espagnols, one female (W. M. W.).

This form is widely distributed throughout the Mediterranean Subregion. I have seen it also from Algeria, Egypt and Greece.

***Eumenes pomiformis* var. *andrei* Dalla Torre**

(*Eumenes obscurus* André)

Tinitine, one male, Aug. 10 (A. M.). Rabat one male, Aug. 22 (W. P. C.). Forest of Mamora, one male (W. M. W.). Tangier, one female.

Likewise widely distributed in the countries bordering the Mediterranean. I have seen it from Spain.

The above two forms are color variants of the very variable *E. pomiformis* (Fabricius), of Central and Southern Europe, which I regard as specifically distinct from *E. coarctatus* (Linnaeus). The puncturation of the second abdominal tergite is much coarser in *pomiformis* than in *coarctatus*, differing hardly from that of the first; whereas in *coarctatus* it is fine and contrasts strongly with the coarse sculpture of the first tergite.

***Eumenes picteti* H. de Saussure**

Asni, one female, Aug. 12 (W. P. C.).

I can find no previous Moroccan record of this wasp, which was originally described from Southern France (Montpellier), but occurs also in Algeria (Biskra) and Spain (not only in Spain as Dusmet states, evidently following Ed. André).

Although I have seen no specimen from southern Europe, I feel fairly certain about my identification. Unfortunately some of the most important structural characters of the species have not been mentioned thus far. André's drawing of the petiole is certainly erroneous and, though de Saussure's original figure of the male is recognizable, it disagrees in some respects with the Moroccan female, which has the thorax much shorter and more distinctly widened anteriorly and the narrowed basal portion of the second abdominal segment longer. Clypeus and

tegulae are coarsely punctured; the first abdominal segment, or petiole, is about one and one-half times as long as the thorax, evenly curved in profile, the narrow basal third gradually widened posteriorly, the apical two-thirds parallel-sided, the dorsal face distinctly flattened and with an elongate-oval, rather shallow depression before the apex; petiole with very scattered, fine punctures, the remainder of the abdomen impunctate. Since the mesopleura are without epinenial carinae anteriorly as well as posteriorly, and the apex of the second tergite is simple and smooth, while the male antenna ends in a hook, *E. picteti* should, at least provisionally, be placed in the subgenus *Delta* H. de Saussure, as I have defined it in 1926 (Ann. South Afric. Mus., XXIII, p. 487).

E. picteti is, however, undoubtedly related to *E. leptogaster* F. Walker, of Arabia, which differs in the longer basal stalk of the second tergite. As I have pointed out before, these very slender, small species of *Eumenes* form a natural subgeneric group, for which the name *Ischnogasteroides* Magretti might be available. The type of Magretti's genus should, however, first be studied carefully. *Eumenes tenuis* F. Morawitz, of Transcaspiia, and *E. lenis* Bingham, of Burma, also appear to belong in the same group, although the descriptions do not mention the shape of the apex of the second tergite. F. Morawitz also suggests that his *E. tenuis* might belong to *Ischnogasteroides*.

Ancistrocerus blanchardianus (de Saussure)

Asni, one female, Aug. 8 (T. D. A. C.). Marrakesh, one male, May 27 (W. M. W.).

Previously recorded from Morocco by Dusmet and also known from Algeria. The transverse carina of the first abdominal tergite is sufficiently well-marked to place this species in *Ancistrocerus*; the poor visibility of the carina is mainly due to the yellow color of the sides of the tergite. The species is characterized in both sexes by the unusually broad clypeus, which is coarsely punctate and ends in two widely separated, sharp teeth.

Ancistrocerus parietum (Linnaeus)

Tinitine, one female, Aug. 10 (A. M.). Rabat, one male, Aug. 5, at flowers of *Solanum* (T. D. A. C.). Both specimens have

only the first three abdominal tergites marked with yellow and are similar to the more common color form of Central Europe.

Dusmet has recorded this species from Morocco. It is common throughout the Palearctic Region and has been introduced by man into the eastern United States.

***Odynerus crenatus* Lepeletier**

Asni, two males, Aug. 7 (A. M.) and Aug. 8 (T. D. A. C.).

Widely distributed throughout the Mediterranean Subregion. I have seen it also from Spain, Sardinia, Greece, Roumania, Tunisia and Algeria, and Dusmet has previously recorded it from Morocco. It is surprising that E. Saunders did not list it among the wasps taken by Eaton and Morice in Algeria, since I have taken a male at Biskra and I have another from Laghouat.

The several species of the *simplex* group have long been defined almost entirely by the color markings, which, as Dusmet has pointed out, are often variable. Even A. v. Schulthess' recent revision of this group (1928, Eos, IV, pp. 69-79 and 406-410), although extremely valuable, relies to a large extent upon color. Some, at least, of the forms are well characterized by structural peculiarities. For instance, the female of *O. crenatus* may be recognized by the clypeus being about as long as wide and covered with scattering, moderately strong punctures, and by the shape of the upper median area of the propodeum, which is triangular, smooth and shiny.

***Odynerus tripunctatus* (Fabricius)**

Ifrane, one male, Aug. 28 (W. P. C.).

Previously recorded from Morocco by Dusmet, and known also from Algeria and Spain. Ed. André placed this species in his *simplex* group, and Dusmet evidently followed him. The male from Morocco, however, does not have the superior ridges of the propodeum strongly raised and separated by a deep notch from the sides of the postscutellum. The structure of the propodeum places *O. tripunctatus* in the *dantici* group and separates it at once from *O. stigma* (Fabricius).

***Odynerus dantici* (Rossi)**

Ifrane, one female, Aug. 29 (W. P. C.).

Previously recorded by Dusmet from Morocco, and widely distributed in Southern Europe and North Africa. I have seen it also from Spain, Greece and Algeria.

***Odynerus parvulus* Lepeletier**

Asni, one male, Aug. 10 (T. D. A. C.).

Recorded from Morocco by Dusmet and widely distributed throughout the Mediterranean Subregion. I have seen it also from Spain, Greece and Algeria.

Polistineæ

***Polistes semenowi* F. Morawitz**

Asni, Aug. 15, one male (A. M.). Amizmiz, two females (W. M. W.).

This peculiar species, though colored like the common *P. gallicus* and its allies, is easily told in both sexes by the shape of the head and the grooved mandibles. It occurs throughout southern Europe and extends eastward into Persia. I have found no previous record from Morocco.

***Polistes kohli* Dalla Torre**

(*Polistes dubius* Kohl, 1898; not of de Saussure, 1867)

Asni, Aug. 11, one male (W. P. C.). Tinitine, Aug. 10, one female (A. M.). Rabat, Aug. 22, one female (T. D. A. C.).

This species occurs throughout the Mediterranean Subregion. Dusmet has recorded it from Morocco.

Vespinæ

***Vespula germanica* (Fabricius)**

Asni, Aug. 6, six workers (T. D. A. C.; W. P. C.; A. M.). Azrou, three females (W. M. W.).

A common Palearctic species, recorded previously from Morocco and occurring also in Algeria.

***Vespula (Dolichovespula) sylvestris* (Scopoli)**

Ifrane, Aug. 29, one male (T. D. A. C.).

This appears to be the first record of this wasp from North Africa. It is common throughout Europe, also in Spain. I have compared the genitalia of the Moroccan male with those of specimens from Germany and France.